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ForwardNET: Solving the Near-field Phase Retrieval Inverse Problem Using a Forward-Operator Guided Generative Network

Tuesday 24 September 2024 15:00 (30 minutes)

The near-field phase retrieval problem is a non-linear, ill-posed inverse problem. It is also an important step in X-ray imaging, a precursor to the tomographic reconstruction stage. We will discuss ForwardNET, a deep learning model for solving this problem, along with other inverse problems that we face at our PETRA III, P05 and P07 experiments. This includes fly-scan tomographic reconstruction, and reconstructing images from Gaussian, motion and rotational blur. We will then continue to discuss how we handle noise and uncertainity.

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